

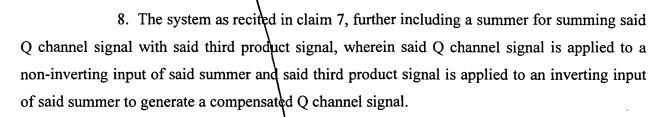
CLAIMS

We claim:

1. A system for compensating for phase errors in the real and quadrature channels of a phase produlation system comprising:

an I input channel for receiving the real (I) components of a carrier signal;

- a Q input channel for receiving the quadrature (Q) components of a carrier signal; and
- a compensation circuit for multiplying said I channel and Q channel signals to develop a first product signal and averaging said product signal to generate a compensated channel signal.
- 2. The system as recited in claim 1, wherein said compensated channel signal is the Q channel compensated channel signal.
- 3. The system as recited in claim , wherein said compensation circuit includes a first multiplier for multiplying said I channel signal and said Q channel signal to generate said first product signal.
- 4. The system as recited in claim 3, further including an averaging circuit for time averaging said product signal.
- 5. The system as recited in claim 4, wherein said time averaging circuit is a low pass filter.
- 6. The system as recited in claim 4, further including a second multiplier for multiplying said I channel signal by a predetermined constant to define a second product signal.
- 7. The system as recited in claim 6, further including a third multiplier for multiplying said first and second product signals to generate a third product signal.



- 9. The system as recited in claim 8, wherein said compensated Q channel signal includes a compensation factor which is a function of said phase error.
- 10. The system as recited in claim 9, wherein said compensated Q channel signal is the compensation factor multiplied by $\sin(\omega t)$.
- 11. The system as recited in claim 10, wherein said compensation factor is $cos(\psi)$.
- 12. A method for compensating for phase errors in the real (I) and quadrature (Q) channels of a phase modulation system comprising the steps of:
 - a) multiplying the I channel signal by the Q channel signal to develop a first product signal;
 - b) averaging the product signal over time, defining a time averaged product signal; and
 - c) generating a compensated Q channel signal based upon said time averaged product signal.
- 13. The method as recited in claim 12, including multiplying said time averaged product signal by a multiple of said I channel signal to generate a second product signal.
- 14. The method as recited in claim 13, including subtracting said second product signal from said Q channel signal.